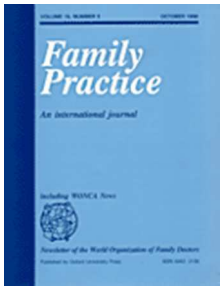

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Patients' Perceptions and Experiences of Patient Safety in Primary Care in England
Running head: Patients' perception of safety in primary care

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Patients' Perceptions and Experiences of Patient Safety in Primary Care in England

Running head: Patients' perception of safety in primary care

Article category: Qualitative Research

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ABSTRACT

Background: One of the most remarkable features of patient safety research in primary care is the sparse attention paid to patients' own experiences.

Objective: To explore patient's perceptions and experiences of patient safety in primary care in England.

Methods: We conducted a qualitative study in the South of England with an opportunistic sample of 27 primary care users. Information was obtained from four patient focus groups. A thematic content analysis was conducted by three analysts and consensus reached within the research team on the key themes that emerged.

Results: Participants' conceptualizations of patient safety referred to high standards of healthcare delivery within a relationship of trust. Participants identified four main factors that they believed could potentially affect patient safety. These included factors related to: 1) the patient (attitudes, behaviours, and health literacy), 2) the health professional (attitudes, behaviours and accuracy of diagnoses), 3) the relationship between patients and health professionals (communication and trust), and 4) the healthcare system (workload, resources, care coordination, accessibility, interdisciplinary teamwork, and accuracy of health care records). Confidentiality, continuity of care and treatment-related safety emerged as cross-cutting major threats to patient safety.

Conclusion: The exploration of participants' perceptions and experiences allowed the identification of a wide variety of themes that were perceived to impact on patient safety in primary care. The findings of this study could be used to enrich current frameworks that are exclusively based on professional or healthcare system perspectives.

Keywords: Primary Health Care; Patient Safety; Qualitative Research; Focus Groups; Health Services Research.

BACKGROUND

Patient safety, defined by the World Health Organization as "*the prevention of errors and adverse effects to patients associated with health care*" (1), has become a priority in healthcare settings. Most of the research in this field so far has focused on hospital settings. However, the vast majority of healthcare consultations actually take place in primary care. Furthermore, many safety incidents identified in hospitals actually originate in primary care, making the need for primary care patient safety research more pressing (2).

It has been estimated that 2-3 patient safety incidents occur per 100 primary care consultations (3), and that between 45% and 76% of them can be prevented (4). These incidents are frequently related to diagnosis (either delayed or missed) or to treatment (delayed or inappropriate) (5). Factors contributing to the occurrence of these incidents include working environment, information transfer at the primary secondary interface (6), doctor-patient relationship, or continuing education (7).

There is increasing evidence suggesting that patients are acute observers of their own care, and that their perceptions and experiences have the potential to raise awareness of previously undetected problems in healthcare (8). However, one of the most remarkable features of patient safety research in primary care is still the lack of attention paid to the perspective and experiences of the patients' themselves.

Population surveys suggest that medical errors are common, and that public perceptions differ from those of clinicians (9). However, surveys cannot elicit in-depth details about the nature of errors and associated harms that patients experience. Notwithstanding the increasing number qualitative studies recently published in this area (10-15), most of the available evidence rely of data from studies conducted in US or Australia. Patient safety, often articulated as a feature of healthcare systems, is highly dependent on the context in which it is examined. Evidence in England is still scarce, restricted to only two qualitative studies (14, 15). This limited evidence has strong implications for our conceptualization of patient safety, which is substantially shaped by professional perceptions. In order to increase the level of evidence regarding patients' perceptions and experiences of patient safety in England, further qualitative studies are needed.

This study aimed to explore patients' perceptions and experiences of patient safety in primary care in England.

METHODS

This study is part of a larger project aimed at identifying and developing a set of tools to measure patient safety in primary care (see Acknowledgements), one of which was designed to measure patients' experiences and outcomes of patient safety (16).

Design, participants and sampling

The study population were adults who were users of primary care services in two regions of South England (Hayward Heath and Reading). Sampling was opportunistic. Potential participants were approached by email and social media by a patient representative using the snowballing technique aiming at maximum variation.

Data collection

We conducted four focus groups with a total of twenty-seven participants. They were heterogeneous in terms of educational level, occupation status, and self-perceived health. Male (37%) and younger participants (19% below 45 years of age) were underrepresented (Table 1 and Supplementary Table S1). The interviews were conducted in neutral settings. They were facilitated by three academic researchers (IRC, SPS, JMV) with PhD degree and previous experience in qualitative research. Each session included two observers in attendance (IRC, SPS, JMV, patient representative) taking field notes during and after the group discussions.

[Table 1 about here]

We used a topic guide (Box 1) developed by three members of our team (IRC, SPS, JMV) based on findings from a meta-synthesis of qualitative studies examining patients' perspectives and experiences of patient safety in primary care in the UK (17). There is a lack of patient centred frameworks of patient safety, and as a result, one of the main limitations of previous research is that patients have been presented with frameworks that are consistently based on professional perspectives. For that reason in this study we deliberately did not use a specific theoretical framework - we wanted to hear from patients how they conceptualized patient safety in their own words and without imposing such frameworks.

All interviews took place between July and November 2013, lasted approximately 60 minutes, and were digitally recorded with permission. Participants did not previously know the research team members and were financially compensated for their time. Transcripts are available from the corresponding author on request.

[Box 1 about here]

Data analysis

The audio files were transcribed verbatim. A manual thematic content analysis (18) was carried out. Three researchers (MPV, AB, EPR) began by reading and re-reading the transcriptions to recognise the range of data in the dataset, and then independently performed the following steps: a) identification of the relevant subjects and texts; b) fragmentation of the text; c) text codification with emerging codes; d) creation of categories; e) analysis of each category and; f) interpretation of the emerging findings. Results were subsequently discussed amongst the research team until a consensus on the key themes was reached.

Ethical considerations

The study was approved by the Ethical and Clinical Research Committee of the University of Nottingham. Participants provided informed consent prior to data collection. Confidentiality of participant identity was assured with focus groups only identified by codes in reports and publications.

RESULTS

Participants' perspectives covered three major areas: 1) conceptualization of patient safety, 2) key factors influencing patient safety, and 3) major threats.

Conceptualization of patient safety

Definitions. Patients' conceptualizations of patient safety in primary care were heterogeneous and multidimensional. Patients conceptualised the meaning of "patient safety" as containing both positive aspects ("well-being") and negative ones ("harm", or even "fear") (Box 2). Three main dimensions emerged: patient centred care (e.g., "trying to do what was appropriate for the patient"); technical quality of clinical care ("being treated to the best possible standard"); and health outcomes ("adverse event" or "iatrogenic incident"). Some conceptualizations generally addressed one or more dimensions, whereas others focused on specific aspects of them (namely "trust", "medical records", or "medication problems").

[Box 2 about here]

Examples. Participants gave a number of examples of patient safety problems; these covered many different aspects, from errors in the identification of patients to suffering serious harm (Box 3).

[Box 3 about here]

Factors influencing patient safety in Primary Care

Informants felt that there could be a risk to patient safety at any step of the healthcare delivery process, and identified factors related to: 1) patients, 2) health professionals, 3) the relationship between patients and health professionals, and 4) the health system (Figure 1).

[Figure 1 about here]

Patients' factors. Participants believed that patients' attitudes and behaviours could potentially contribute to the prevention and amelioration of safety events. They perceived that patients' awareness of this potential effect is often shaped by previous experiences. Negative experiences seemed to overshadow the perception of efficiency and subsequent encounters with the health system.

Participants acknowledged a degree of self-responsibility and the importance of being active players in their own healthcare (e.g. by requesting a second opinion when in doubt). Patients wanted to voice their complaints to prevent other patients from suffering similar experiences.

Participants considered that patient's health literacy could also modulate the provision of safe healthcare. They suggested that health providers should take into account the health literacy of their patients, and believed that leaflets in different languages should be supplied.

Health professionals' factors. Participants often highlighted the importance of their healthcare providers' *attitudes and behaviours*. They expected their providers to keep abreast of new knowledge and procedures, and have a positive attitude and commitment towards *continuous professional development*.

Participants appreciated the usefulness of IT systems in facilitating follow up. However they felt that some professionals prioritised data entry to listening to patients. Some informants felt uncomfortable with their General Practitioner (GP) searching the internet for medical guidance, which communicated more a potential GP's lack of knowledge than reassurance that management was being confirmed with appropriate sources of evidence.

Participants understood that health professionals needed to balance healthcare provision with *management tasks*. However, they believed that providers should concentrate on patients and leave management to other professionals in the health system. They also believed that professionals did not voice their opinion on budget cuts for fear of political implications and their desire to obtain the financial incentives. Participants also highlighted the need for *transparency* in disclosing safety problems and felt it was important that mechanisms be put in place to prevent future problems.

Diagnosis accuracy was regarded as an important aspect of safety. Participants perceived that accurate diagnosis was a crucial area of primary care, and some of them regarded the role of GPs purely as "diagnosticians". Participants associated diagnostic errors to providers who did not give

enough time to considering the many different aspects of a patient with multiple and complex conditions. They also attributed it to the broad range of health problems professionals encounter in their day-to-day work.

Relationship between patients and health professionals. Informants attributed a key role to professionals in ensuring adequate relationship with patients. In relation to *patient-provider communication*, participants sometimes felt unheard and perceived lack of empathy as they felt rushed. They also had little visual contact with the health provider and were afraid to ask questions. Too much emphasis was placed on computer data entry during the consultation and all these aspects were believed to impact on the patient-health professional relationship and undermine patient safety. Participants underscored the need for good communication skills in health professionals and empathy within a relationship based on equality. They explained that a relationship based on *trust* was one of the most important factors for patient safety and that trust was built on provider continuity of care and a patient-centred approach.

Opinions differed with respect to *doctors in training*. Whereas some participants believed that less experienced professionals carried a certain degree of safety risk, others considered that these doctors had more time, their scientific knowledge was more up-to-date, and that they would consult their seniors when required.

Healthcare system's factors. Participants linked excessive *workload* with a negative impact on safety. *Limited resources* (e.g., reduced numbers of staff) were also felt to threaten the objectives of the health system, the availability and update of services, and treatments. Patient safety requires a balance between care and costs, the periodical update of procedures and a responsible use of healthcare services.

Cohesion and adequate coordination between professionals and levels of care was a key aspect of safety. To avoid errors, they considered the adequate exchange of information within the team, and an efficient coordination of healthcare delivery to be crucial. Participants also linked interdisciplinary team work with safer healthcare.

In terms of *accessibility*, participants highlighted the difficulties in accessing *their own GP* due to a perceived lack of available appointments and phone consultations. The frequency with which

their *own* professionals changed was perceived as undermining their continuity of care, patient-centred care, and made the process more time-consuming and inefficient. Both the *booking system* and *telephone consultations* were felt to play an important role in patient safety. The patients found the booking system too complicated and perceived it as difficult to get an urgent appointment. They also thought that not all administrative staff had the skills to prioritize patients as required. Accessibility was felt to be less at night or over weekends, and in certain geographical regions, and this in turn meant that some patients postponed contacting their GP surgery which had the potential to aggravate some health conditions. Participants explained that geographical variability in access to prevention and health services existed, and that the system did not have systems in place to reduce these disparities.

At the GP practice, the use of IT systems to support self-check-in was often perceived as difficult and intimidating for elderly people.

The lack of access to the primary care medical records by other health professionals was perceived by patients to be a major problem. Participants also questioned the *accuracy of their notes*, and expected health records to include all clinical relevant information to ensure continuity of care. Participants also highlighted conditions such as allergies, surgical procedures and medication, dementia and other neurological disorders, as likely to get miscommunicated.

Major threats to patient safety in Primary Care

Three major threats were identified by patients: confidentiality, continuity, and safety of treatments**.** The lack of *confidentiality* was a major concern for most participants, who needed to know that all professionals were aware that everything they explained was confidential. Some participants were not happy to explain their problems to the administration staff that handle telephone calls and ran the reception. They only shared some information with health professionals and provided examples of lack of sensitivity and respect for confidentiality. Participants explained the need to find a balance between confidentiality and availability of clinical information.

Participants explained the need for providers to offer *continuity of care***.** They stated that an integrated approach to care is not possible with a high turnover of physicians.

Medication errors compromise *treatment safety*. Errors such as inaccurate or unreadable prescriptions were likely to result from the large amount of decisions GPs need to make, the lack of

interpersonal communication, and often having different professionals involved in the healthcare process.

DISCUSSION

Summary

In this study we explored patients' experiences and perceptions of the safety of the healthcare provided in their primary care setting. Patients identified a number of factors that could potentially influence patient safety in primary care. Most factors related to processes of care and interpersonal relationships with care providers, but also to specific features of the healthcare system and to patients' own attitudes and behaviours towards safety.

Strengths and limitations

The data gathered in this study were rich in detail and included novel aspects such as patients' conceptualization and determinants of primary care patient safety. All previous conceptual models of patient safety in primary care have been based on professionals' perspectives. This study contributed to address this gap by gathering patients' perspectives as naïve to the concept as feasible to start developing a patient centred model of patient safety.

In terms of its limitations, our sampling was opportunistic. Participants included relatively fewer males and younger patients. This may be attributable to the fact that the group interviews took place during working days, which may have possibly limited the participation of some patients of working age. However, it is worth noting that these female and elderly individuals represent the most frequent users of primary care services, and thus may have more experiences and better articulated perceptions of patient safety issues at their practices. Finally, it was difficult to categorise some of the themes (for instance, problems related to accuracy of notes could be attributable to providers but also to the healthcare system). Discrepancies were discussed among the members of the team until agreement was reached.

Comparison with existing literature

The factors identified as safety problems were mainly related to processes of care, and great importance was given to patient-centred care. This resonates with previous research, which suggests that most errors reported by patients relate to poor communication and interpersonal skills (15, 19).

Access has previously been identified as a main issue for patient safety (19), and it has been suggested that healthcare could be made safer by increasing timely access to patients' own physicians and decreasing time in waiting rooms (11). Problems related to access and to transitions between levels of care have also previously been identified as relevant safety issues (13, 15).

The severity of physical harm experienced or witnessed by the participants was usually regarded as low. Emotional harm was however far more frequent and related not only to patients' high expectations of care, but also to the attitudes of frontline staff. Previous studies found that patients would like their physicians to disclose any errors they have made, even minor ones, and this may in turn actually reduce the risk of punitive actions (20). Medication related harm was also a cause of concern, and inadequate provider-communication was seen as an important contributor, which reiterates previous findings (21).

Implications for research

The findings from this study have informed the development of a patient centred instrument to measure patients' experiences and outcomes of patient safety in primary care (16).

We identified a large number of themes and subthemes. Further research is needed to provide a deeper understanding of each of the specific aspects identified here, and to examine of potential differences across different groups of patients defined by gender, age, or levels of service use, among others. Future studies should incorporate both quantitative and qualitative designs, using larger and more representative samples.

We did not observe relevant differences between participants who had experienced safety issues and those who had not. This may suggest that the construction of the concept of patient safety is based not only on individual but also on social experiences. Again, studies based on larger and more representative sample are needed to further explore this hypothesis.

Patients recognized themselves as key players in ensuring healthcare safety. Notwithstanding the work conducted during the recent years in the area of patient engagement in patient safety (22), additional research is needed to i) better understand how to support patients to become more actively involved; and ii) to evaluate the effectiveness of different types of involvement, such as patient retrospective feedback, participation in healthcare training, or monitoring their own electronic health records.

Implications for clinical practice

Patients seem to use service quality as a cue when forming safety perceptions. Organizations should listen to patients' experiences and act to improve service quality problems before they result in possible patient harm. Even though patients' perceptions of safety problems may not always result in adverse events, they however might influence patient satisfaction (23), regimen adherence/concordance (24), and other outcomes and therefore deserve attention. Therefore, an improvement of the communication of expectations for care might prove valuable.

Our study identified a number of key areas that raised potential concerns. Addressing these areas with interventions targeted at healthcare providers, such as supporting continuity of care, confidentiality of information, or improving the readability of prescriptions, have the potential to increase patient satisfaction and engagement with healthcare services. Additional interventions could include the provision of information tailored to patients' health literacy, improvement of providers' interpersonal skills, or encouragement for providers to disclose safety events.

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Declaration

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Ethical approval: Nottingham Research Ethics Committee (Reference 13/EM/0258; July 2013). University of Nottingham.

Conflict of interest: none

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Figure 1: Factors influencing the safety of the healthcare provided in general practices in England as perceived by the 27 patients participating in the four focus group interviews that took place in two regions of South England between July and November 2013.

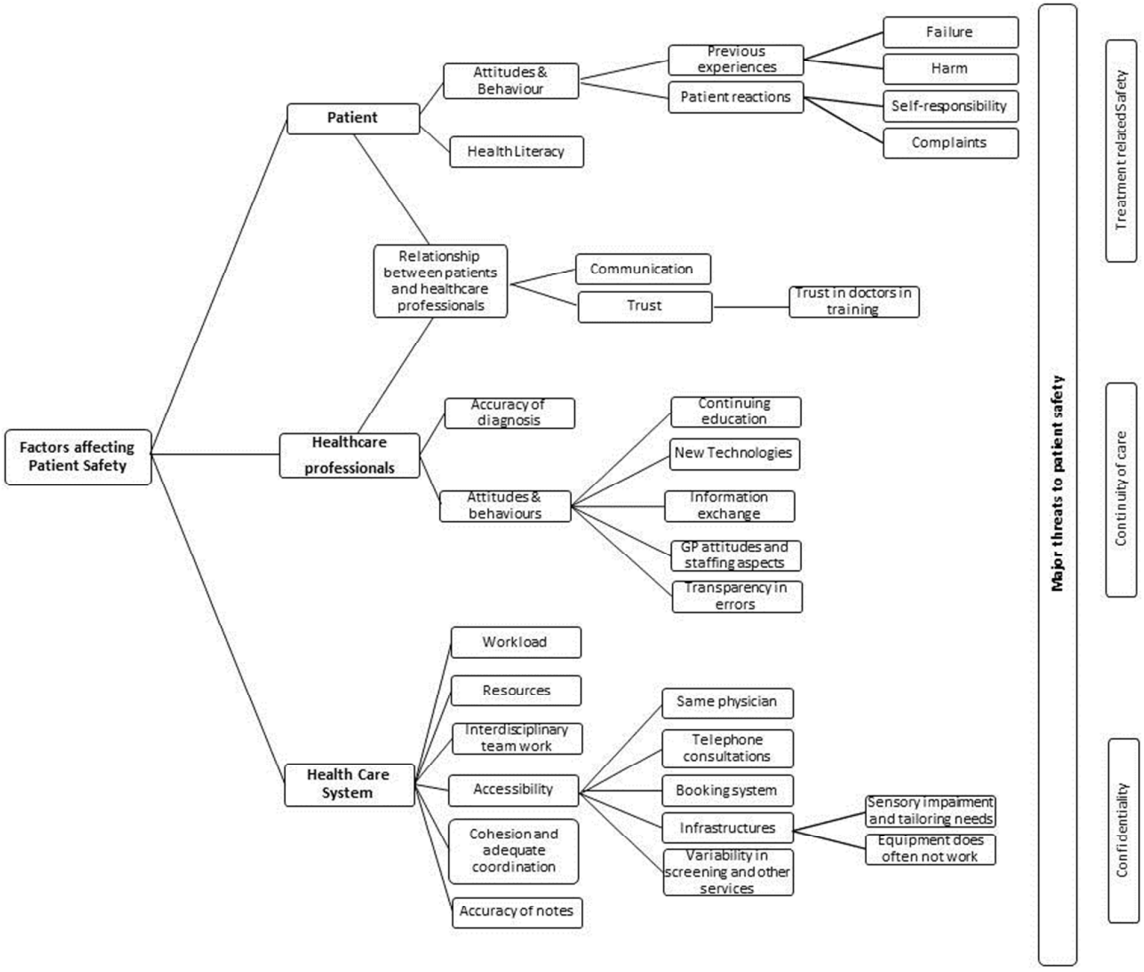

Table 1: Characteristics of the 27 informants who participated in each of the four group interviews that took place in two regions of South England between July and November 2013

Group	Total participants	Sex	Age	Education	Occupation	Times seen to professional [a]	General Health [b]	Long term condition [c]
1	10	3 M; 7 F	From 28 to 67 years old	1 postgraduate degree; 1 undergraduate degree; 3 further education beyond 18 but not a degree; 3 left school at 18; 2 left school aged 16	1 full-time; 3 part-time; 2 unemployed; 2 fully retired from work; 1 long term disability ; 1 none	2 eleven to twenty; 1 six to ten times; 6 one to five times; 1 no	4 very good; 3 good; 1 fair; 1 bad; 1 very bad	7 Yes; 3 No
2	10	4 M; 6 F	From 35 to 67 years old	1 postgraduate degree; 5 undergraduate degree; 1 further education beyond 18 but not a degree; 1 left school at 18; 1 left school aged 16 ; 1 not disclosed	1 full-time; 1 part-time; 1 unemployed; 3 fully retired from work; 1 permanently sick;	3 six to ten times; 2 one to five times; 4 no visits; 1 not disclosed	5 very good; 3 good; 2 fair;	4 Yes; 6 No

					3 none			
3	3	3 F	From 42 to 66 years old	1 further education beyond 18 but not a degree; 1 left school aged 16; 1 not disclosed	1 part-time; 1 fully retired; 1 not disclosed	1 eleven to twenty; 1 one to five times; 1 not disclosed	1 good; 1 bad; 1 not disclosed	2 Yes; 1 No
4	4	3 M; 1 F	From 65 to 73 years old	2 postgraduate degree; 1 have undergraduate degree; 1 not disclosed	2 part-time; 1 fully retired; 1 not disclosed	3 one to five times; 1 not disclosed	1 very good; 1 good; 1 fair; 1 not disclosed	2 Yes; 2 No

a: Number of times seen or spoken to GP or nurse in the last 12 months; b: Self-reported health status; c: Number of participants reporting having at least one long term condition.

Sex: M (male); F (female). Education: postgraduate degree; undergraduate degree; further education qualification beyond the age of 18 years, but not a degree; left school aged 16 or younger and no further education. Occupation: Full-time paid work (30 hours or more); Part-time paid work (under 30 hours); Long term disability; Fully retired from work.

Box 1: Topic guide used in the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

What are your experiences or opinions of Patient Safety in your practice in Primary Care?

Prompts (to be used only if necessary):

- What does the term "Patient Safety" mean to you?
- What type(s) of safety problem(s) can occur?
- Has anyone ever experienced a safety problem in their practice?
- Why do safety problems occur?

What are the key aspects that you consider relevant to Patient Safety in Primary Care?

Prompts (to be used only if necessary):

- When / where can patients be harmed when receiving care?
- Communication?
- Practice culture?

What can be done to prevent patients from being harmed in Primary Care?

Prompts (to be used only if necessary):

- Improve communication when a patient is discharged from hospital?
- Ensure results get reviewed?
- Avoid errors around repeat prescriptions?

Box 2: Examples of patients' conceptualizations of patient safety in primary care, obtained during the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

- 'I would say it [patient safety] is an adverse event which affects the wellbeing of the patient, whatever it may be.' (participant 1, group 4)
- 'Probably [patient safety is] being treated to the best possible standard, look at it positively with respect to all the recent guidelines for every patient coming in with every condition which is…yeah?' (participant 2, group 4)
- '[Patient safety is] kind of like the well-being of the patient. (participant 3, group 3)
- '[Patient safety is] Trying to do with what's appropriate for the patient.' (participant 6, group 1)
- 'That is a patient safety incident [side effects from wrong medicine]. That's an iatrogenic incident because you were injured under the care of the physician.' (participant 3, group 4)
- 'I think [patient safety is] the trusting, the confidence in your doctor or the practice or the nurse or whoever it is, that they will treat you properly and if they don't know what's going on, they'll find someone who does.' (participant 5, group 2)
- '[Patient safety is] trust basically. Having that trust that you will be looked after by your surgery' (participant 1, group 2)
- '… I look upon safety as harm.' (participant 3, group 4)
- 'I would say [patient safety] is when your needs are given full consideration and not kind of left behind (…) it's kind of…receiving treatment that you need really.' (participant 3, group 3)
- 'Patient safety would be that you, the patient tells you all the information about him or herself. It needs to have what conditions they have, what medication they have, what allergies they have and what treatment – maybe they've had operations or treatment for certain things. All that needs to be registered and monitored so that it doesn't matter who you see in the practice, they can just get the notes and have a look at it and that is very, very important for patient safety.' (participant 2, group 2)
- 'Patient safety to me is maybe before you are born actually, there was a programme on the television called Your Life in their Hands – I'm putting my life into the doctor's hands. GP is the orange where everything is collated and put in together whereas now it's getting that I'm scared to

put my life in their hands. If I don't look after my life I'm not really prepared to put it into their hands.' (participant 1, group 3)

- [An important aspect of patient safety is] 'Wrong medication…. Yeah wrong dosage and wrong type and stuff like that you know.' (participant 2, group 3)
- 'Safety – providing safety around a patient's confidentiality, situation, condition that they may have – you know providing that safety around them, kind of like safeguarding. That's my fear.' (participant 2, group 3)
- '(…) there's a very important issue about accuracy: a recording of data, recording of data against the right patient record.' (participant 2, group 1)

Box 3: Patient-reported examples of experiences of patient safety events in Primary Care collected during the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

- 'My husband was phoned by the surgery and told he had to go and see the doctor and he said, 'What for?' and he said, 'Oh because of some tests that you've had,' or something, and he thought, 'Well I haven't had any tests.' So he went to see the doctor and the doctor said, 'We have a blood pressure machine in the waiting room that patients are encouraged to use and you put a slip of paper in with your name and your date of birth and then that's recorded against your record and one of the doctors looks at it and calls you in if you're blood pressure is not within the range that it should be.' And the doctor said, 'Well you took your blood pressure and it was really high, I can't remember but it was very high.' So my husband said, 'Well I haven't been in the surgery.' And he said, 'Yes you came in on X date in March – and on X date in March we were in XXX [name of a city]. So basically someone came into the surgery with very high blood pressure and the reading was recorded against my husband's record instead of his or hers, so we wondered what happened to that person.' (participant 2, group 1)
- 'One of my sisters had quite significant problems lately. I mean one of the key indicators is rapid weight loss and she lost I think three stone over the course of about three or four months and she's had all sorts of problems trying to have the problem diagnosed and it might be that the condition that she has now finally been diagnosed caused a miscarriage. And it's been extremely stressful – there's been blood tests have gone missing, it's been the wrong notes have been looked at, she has to go through the same thing with different doctors – that's if she can get through the receptionist.' (participant 6, group 1)
- 'Well a few years ago I had a condition that I went to the doctor – my body broke out in this rash suddenly – it started as a spot and the next day it was all over one side of my body and I went to my…this was a few years ago…I went to my doctor and said, 'What is this?' and she said it was one thing and it wasn't and she kept…I had to see three doctors really until this doctor pinned down it was, it was an eczema kind of thing that just spread. But you know these people looking at me and not knowing what it was.' (participant 6, group 2)
- 'I have a friend whose son had a blood clot and he was very young. Her son was the same age as my son and he had Warfarin, he was young. Over a Christmas period he had to go to an

emergency doctor – chest pain – antibiotics was subscribed, he died Boxing Day in her arms – blood clot in the lung. No continuity of care. No continuity. No flashing showing Warfarin; young man, you know thirty years old; nobody giving them advice, no continuity of care.' (participant 1, group 3)

Patients' Perceptions and Experiences of Patient Safety in Primary Care in England

Running head: Patients' perception of safety in primary care

Article category: Qualitative Research

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ABSTRACT

Background: One of the most remarkable features of patient safety research in primary care is the sparse attention paid to patients' own experiences.

Objective: To explore patient's perceptions and experiences of patient safety in primary care in England.

Methods: We conducted a qualitative study in the South of England with an opportunistic sample of 27 primary care users. Information was obtained from four patient focus groups. A thematic content analysis was conducted by three analysts and consensus reached within the research team on the key themes that emerged.

Results: Participants' conceptualizations of patient safety referred to high standards of healthcare delivery within a relationship of trust. Participants identified four main factors that they believed could potentially affect patient safety. These included factors related to: 1) the patient (attitudes, behaviours, and health literacy), 2) the health professional (attitudes, behaviours and accuracy of diagnoses), 3) the relationship between patients and health professionals (communication and trust), and 4) the healthcare system (workload, resources, care coordination, accessibility, interdisciplinary teamwork, and accuracy of health care records). Confidentiality, continuity of care and treatment-related safety emerged as cross-cutting major threats to patient safety.

Conclusion: The exploration of participants' perceptions and experiences allowed the identification of a wide variety of themes that were perceived to impact on patient safety in primary care. The findings of this study could be used to enrich current frameworks that are exclusively based on professional or healthcare system perspectives.

Keywords: Primary Health Care; Patient Safety; Qualitative Research; Focus Groups; Health Services Research.

BACKGROUND

Patient safety, defined by the World Health Organization as "*the prevention of errors and adverse effects to patients associated with health care*" (1), has become a priority in healthcare settings. Most of the research in this field so far has focused on hospital settings. However, the vast majority of healthcare consultations actually take place in primary care. Furthermore, many safety incidents identified in hospitals actually originate in primary care, making the need for primary care patient safety research more pressing (2).

It has been estimated that 2-3 patient safety incidents occur per 100 primary care consultations (3), and that between 45% and 76% of them can be prevented (4). These incidents are frequently related to diagnosis (either delayed or missed) or to treatment (delayed or inappropriate) (5). Factors contributing to the occurrence of these incidents include working environment, information transfer at the primary secondary interface (6), doctor-patient relationship, or continuing education (7).

There is increasing evidence suggesting that patients are acute observers of their own care, and that their perceptions and experiences have the potential to raise awareness of previously undetected problems in healthcare (8). However, one of the most remarkable features of patient safety research in primary care is still the lack of attention paid to the perspective and experiences of the patients' themselves.

Population surveys suggest that medical errors are common, and that public perceptions differ from those of clinicians (9). However, surveys cannot elicit in-depth details about the nature of errors and associated harms that patients experience. Notwithstanding the increasing number qualitative studies recently published in this area (10-15), most of the available evidence rely of data from studies conducted in US or Australia. Patient safety, often articulated as a feature of healthcare systems, is highly dependent on the context in which it is examined. Evidence in England is still scarce, restricted to only two qualitative studies (14, 15). This limited evidence has strong implications for our conceptualization of patient safety, which is substantially shaped by professional perceptions. In order to increase the level of evidence regarding patients' perceptions and experiences of patient safety in England, further qualitative studies are needed.

This study aimed to explore patients' perceptions and experiences of patient safety in primary care in England.

METHODS

This study is part of a larger project aimed at identifying and developing a set of tools to measure patient safety in primary care (see Acknowledgements), one of which was designed to measure patients' experiences and outcomes of patient safety (16).

Design, participants and sampling

The study population were adults who were users of primary care services in two regions of South England (Hayward Heath and Reading). Sampling was opportunistic. Potential participants were approached by email and social media by a patient representative using the snowballing technique aiming at maximum variation.

Data collection

We conducted four focus groups with a total of twenty-seven participants. They were heterogeneous in terms of educational level, occupation status, and self-perceived health. Male (37%) and younger participants (19% below 45 years of age) were underrepresented (Table 1 and Supplementary Table S1). The interviews were conducted in neutral settings. They were facilitated by three academic researchers (IRC, SPS, JMV) with PhD degree and previous experience in qualitative research. Each session included two observers in attendance (IRC, SPS, JMV, patient representative) taking field notes during and after the group discussions.

[Table 1 about here]

We used a topic guide (Box 1) developed by three members of our team (IRC, SPS, JMV) based on findings from a meta-synthesis of qualitative studies examining patients' perspectives and experiences of patient safety in primary care in the UK (17). There is a lack of patient centred frameworks of patient safety, and as a result, one of the main limitations of previous research is that patients have been presented with frameworks that are consistently based on professional perspectives. For that reason in this study we deliberately did not use a specific theoretical framework - we wanted to hear from patients how they conceptualized patient safety in their own words and without imposing such frameworks.

All interviews took place between July and November 2013, lasted approximately 60 minutes, and were digitally recorded with permission. Participants did not previously know the research team members and were financially compensated for their time. Transcripts are available from the corresponding author on request.

[Box 1 about here]

Data analysis

The audio files were transcribed verbatim. A manual thematic content analysis (18) was carried out. Three researchers (MPV, AB, EPR) began by reading and re-reading the transcriptions to recognise the range of data in the dataset, and then independently performed the following steps: a) identification of the relevant subjects and texts; b) fragmentation of the text; c) text codification with emerging codes; d) creation of categories; e) analysis of each category and; f) interpretation of the emerging findings. Results were subsequently discussed amongst the research team until a consensus on the key themes was reached.

Ethical considerations

The study was approved by the Ethical and Clinical Research Committee of the University of Nottingham. Participants provided informed consent prior to data collection. Confidentiality of participant identity was assured with focus groups only identified by codes in reports and publications.

RESULTS

Participants' perspectives covered three major areas: 1) conceptualization of patient safety, 2) key factors influencing patient safety, and 3) major threats.

Conceptualization of patient safety

Definitions. Patients' conceptualizations of patient safety in primary care were heterogeneous and multidimensional. Patients conceptualised the meaning of "patient safety" as containing both positive aspects ("well-being") and negative ones ("harm", or even "fear") (Box 2). Three main dimensions emerged: patient centred care (e.g., "trying to do what was appropriate for the patient"); technical quality of clinical care ("being treated to the best possible standard"); and health outcomes ("adverse event" or "iatrogenic incident"). Some conceptualizations generally addressed one or more dimensions, whereas others focused on specific aspects of them (namely "trust", "medical records", or "medication problems").

[Box 2 about here]

Examples. Participants gave a number of examples of patient safety problems; these covered many different aspects, from errors in the identification of patients to suffering serious harm (Box 3).

[Box 3 about here]

Factors influencing patient safety in Primary Care

Informants felt that there could be a risk to patient safety at any step of the healthcare delivery process, and identified factors related to: 1) patients, 2) health professionals, 3) the relationship between patients and health professionals, and 4) the health system (Figure 1).

[Figure 1 about here]

Patients' factors. Participants believed that patients' attitudes and behaviours could potentially contribute to the prevention and amelioration of safety events. They perceived that patients' awareness of this potential effect is often shaped by previous experiences. Negative experiences seemed to overshadow the perception of efficiency and subsequent encounters with the health system.

Participants acknowledged a degree of self-responsibility and the importance of being active players in their own healthcare (e.g. by requesting a second opinion when in doubt). Patients wanted to voice their complaints to prevent other patients from suffering similar experiences.

Participants considered that patient's health literacy could also modulate the provision of safe healthcare. They suggested that health providers should take into account the health literacy of their patients, and believed that leaflets in different languages should be supplied.

Health professionals' factors. Participants often highlighted the importance of their healthcare providers' *attitudes and behaviours*. They expected their providers to keep abreast of new knowledge and procedures, and have a positive attitude and commitment towards *continuous professional development*.

Participants appreciated the usefulness of IT systems in facilitating follow up. However they felt that some professionals prioritised data entry to listening to patients. Some informants felt uncomfortable with their General Practitioner (GP) searching the internet for medical guidance, which communicated more a potential GP's lack of knowledge than reassurance that management was being confirmed with appropriate sources of evidence.

Participants understood that health professionals needed to balance healthcare provision with *management tasks*. However, they believed that providers should concentrate on patients and leave management to other professionals in the health system. They also believed that professionals did not voice their opinion on budget cuts for fear of political implications and their desire to obtain the financial incentives. Participants also highlighted the need for *transparency* in disclosing safety problems and felt it was important that mechanisms be put in place to prevent future problems.

Diagnosis accuracy was regarded as an important aspect of safety. Participants perceived that accurate diagnosis was a crucial area of primary care, and some of them regarded the role of GPs purely as "diagnosticians". Participants associated diagnostic errors to providers who did not give

enough time to considering the many different aspects of a patient with multiple and complex conditions. They also attributed it to the broad range of health problems professionals encounter in their day-to-day work.

Relationship between patients and health professionals. Informants attributed a key role to professionals in ensuring adequate relationship with patients. In relation to *patient-provider communication*, participants sometimes felt unheard and perceived lack of empathy as they felt rushed. They also had little visual contact with the health provider and were afraid to ask questions. Too much emphasis was placed on computer data entry during the consultation and all these aspects were believed to impact on the patient-health professional relationship and undermine patient safety. Participants underscored the need for good communication skills in health professionals and empathy within a relationship based on equality. They explained that a relationship based on *trust* was one of the most important factors for patient safety and that trust was built on provider continuity of care and a patient-centred approach.

Opinions differed with respect to *doctors in training*. Whereas some participants believed that less experienced professionals carried a certain degree of safety risk, others considered that these doctors had more time, their scientific knowledge was more up-to-date, and that they would consult their seniors when required.

Healthcare system's factors. Participants linked excessive *workload* with a negative impact on safety. *Limited resources* (e.g., reduced numbers of staff) were also felt to threaten the objectives of the health system, the availability and update of services, and treatments. Patient safety requires a balance between care and costs, the periodical update of procedures and a responsible use of healthcare services.

Cohesion and adequate coordination between professionals and levels of care was a key aspect of safety. To avoid errors, they considered the adequate exchange of information within the team, and an efficient coordination of healthcare delivery to be crucial. Participants also linked interdisciplinary team work with safer healthcare.

In terms of *accessibility*, participants highlighted the difficulties in accessing *their own GP* due to a perceived lack of available appointments and phone consultations. The frequency with which

their *own* professionals changed was perceived as undermining their continuity of care, patient-centred care, and made the process more time-consuming and inefficient. Both the *booking system* and *telephone consultations* were felt to play an important role in patient safety. The patients found the booking system too complicated and perceived it as difficult to get an urgent appointment. They also thought that not all administrative staff had the skills to prioritize patients as required. Accessibility was felt to be less at night or over weekends, and in certain geographical regions, and this in turn meant that some patients postponed contacting their GP surgery which had the potential to aggravate some health conditions. Participants explained that geographical variability in access to prevention and health services existed, and that the system did not have systems in place to reduce these disparities.

At the GP practice, the use of IT systems to support self-check-in was often perceived as difficult and intimidating for elderly people.

The lack of access to the primary care medical records by other health professionals was perceived by patients to be a major problem. Participants also questioned the *accuracy of their notes*, and expected health records to include all clinical relevant information to ensure continuity of care. Participants also highlighted conditions such as allergies, surgical procedures and medication, dementia and other neurological disorders, as likely to get miscommunicated.

Major threats to patient safety in Primary Care

Three major threats were identified by patients: confidentiality, continuity, and safety of treatments**.** The lack of *confidentiality* was a major concern for most participants, who needed to know that all professionals were aware that everything they explained was confidential. Some participants were not happy to explain their problems to the administration staff that handle telephone calls and ran the reception. They only shared some information with health professionals and provided examples of lack of sensitivity and respect for confidentiality. Participants explained the need to find a balance between confidentiality and availability of clinical information.

Participants explained the need for providers to offer *continuity of care***.** They stated that an integrated approach to care is not possible with a high turnover of physicians.

Medication errors compromise *treatment safety*. Errors such as inaccurate or unreadable prescriptions were likely to result from the large amount of decisions GPs need to make, the lack of

interpersonal communication, and often having different professionals involved in the healthcare process.

DISCUSSION

Summary

In this study we explored patients' experiences and perceptions of the safety of the healthcare provided in their primary care setting. Patients identified a number of factors that could potentially influence patient safety in primary care. Most factors related to processes of care and interpersonal relationships with care providers, but also to specific features of the healthcare system and to patients' own attitudes and behaviours towards safety.

Strengths and limitations

The data gathered in this study were rich in detail and included novel aspects such as patients' conceptualization and determinants of primary care patient safety. All previous conceptual models of patient safety in primary care have been based on professionals' perspectives. This study contributed to address this gap by gathering patients' perspectives as naïve to the concept as feasible to start developing a patient centred model of patient safety.

In terms of its limitations, our sampling was opportunistic. Participants included relatively fewer males and younger patients. This may be attributable to the fact that the group interviews took place during working days, which may have possibly limited the participation of some patients of working age. However, it is worth noting that these female and elderly individuals represent the most frequent users of primary care services, and thus may have more experiences and better articulated perceptions of patient safety issues at their practices. Finally, it was difficult to categorise some of the themes (for instance, problems related to accuracy of notes could be attributable to providers but also to the healthcare system). Discrepancies were discussed among the members of the team until agreement was reached.

Comparison with existing literature

The factors identified as safety problems were mainly related to processes of care, and great importance was given to patient-centred care. This resonates with previous research, which suggests that most errors reported by patients relate to poor communication and interpersonal skills (15, 19).

Access has previously been identified as a main issue for patient safety (19), and it has been suggested that healthcare could be made safer by increasing timely access to patients' own physicians and decreasing time in waiting rooms (11). Problems related to access and to transitions between levels of care have also previously been identified as relevant safety issues (13, 15).

The severity of physical harm experienced or witnessed by the participants was usually regarded as low. Emotional harm was however far more frequent and related not only to patients' high expectations of care, but also to the attitudes of frontline staff. Previous studies found that patients would like their physicians to disclose any errors they have made, even minor ones, and this may in turn actually reduce the risk of punitive actions (20). Medication related harm was also a cause of concern, and inadequate provider-communication was seen as an important contributor, which reiterates previous findings (21).

Implications for research

The findings from this study have informed the development of a patient centred instrument to measure patients' experiences and outcomes of patient safety in primary care (16).

We identified a large number of themes and subthemes. Further research is needed to provide a deeper understanding of each of the specific aspects identified here, and to examine of potential differences across different groups of patients defined by gender, age, or levels of service use, among others. Future studies should incorporate both quantitative and qualitative designs, using larger and more representative samples.

We did not observe relevant differences between participants who had experienced safety issues and those who had not. This may suggest that the construction of the concept of patient safety is based not only on individual but also on social experiences. Again, studies based on larger and more representative sample are needed to further explore this hypothesis.

Patients recognized themselves as key players in ensuring healthcare safety. Notwithstanding the work conducted during the recent years in the area of patient engagement in patient safety (22), additional research is needed to i) better understand how to support patients to become more actively involved; and ii) to evaluate the effectiveness of different types of involvement, such as patient retrospective feedback, participation in healthcare training, or monitoring their own electronic health records.

Implications for clinical practice

Patients seem to use service quality as a cue when forming safety perceptions. Organizations should listen to patients' experiences and act to improve service quality problems before they result in possible patient harm. Even though patients' perceptions of safety problems may not always result in adverse events, they however might influence patient satisfaction (23), regimen adherence/concordance (24), and other outcomes and therefore deserve attention. Therefore, an improvement of the communication of expectations for care might prove valuable.

Our study identified a number of key areas that raised potential concerns. Addressing these areas with interventions targeted at healthcare providers, such as supporting continuity of care, confidentiality of information, or improving the readability of prescriptions, have the potential to increase patient satisfaction and engagement with healthcare services. Additional interventions could include the provision of information tailored to patients' health literacy, improvement of providers' interpersonal skills, or encouragement for providers to disclose safety events.

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Declaration

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Conflict of interest: none

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Figure 1: Factors influencing the safety of the healthcare provided in general practices in England as perceived by the 27 patients participating in the four focus group interviews that took place in two regions of South England between July and November 2013.

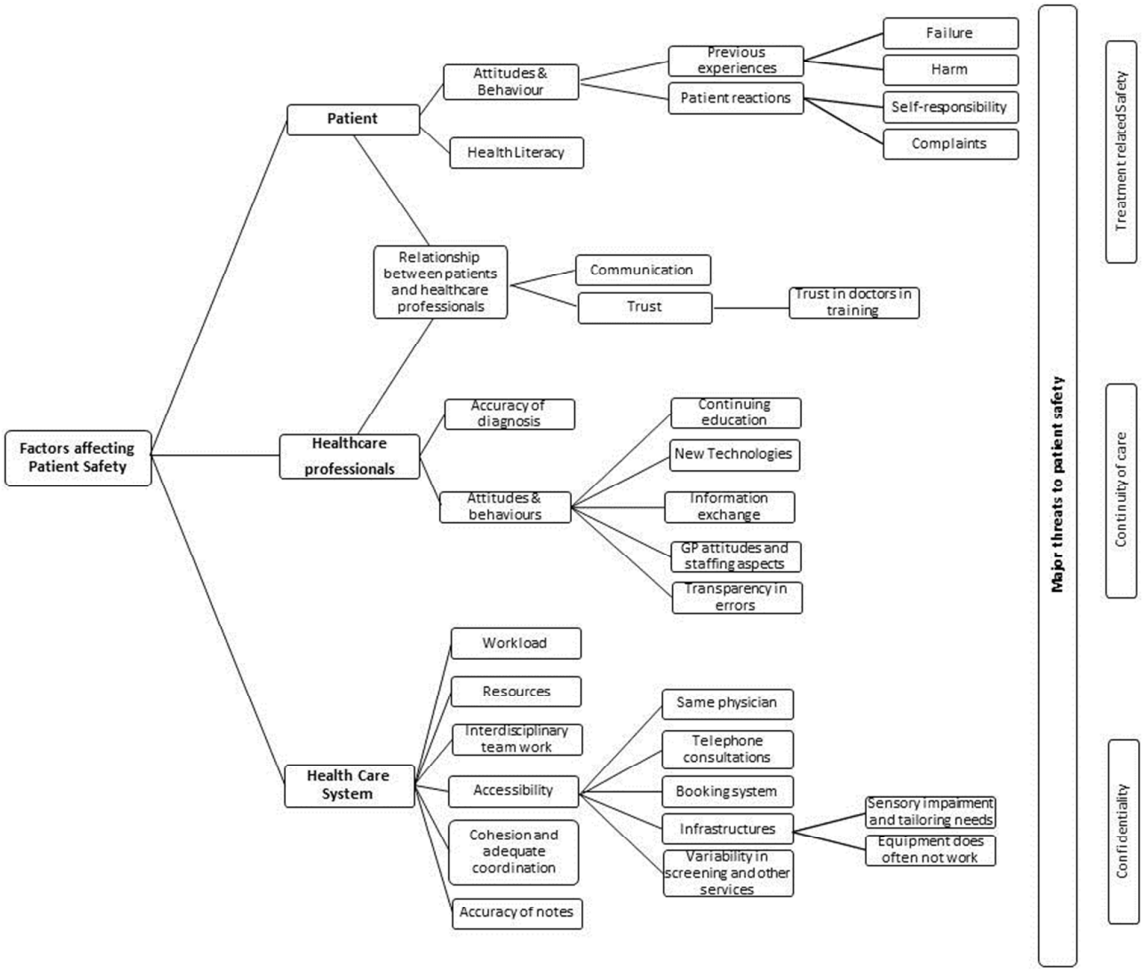


Table 1: Characteristics of the 27 informants who participated in each of the four group interviews that took place in two regions of South England between July and November 2013

Group	Total participants	Sex	Age	Education	Occupation	Times seen to professional [a]	General Health [b]	Long term condition [c]
1	10	3 M; 7 F	From 28 to 67 years old	1 postgraduate degree; 1 undergraduate degree; 3 further education beyond 18 but not a degree; 3 left school at 18; 2 left school aged 16	1 full-time; 3 part-time; 2 unemployed; 2 fully retired from work; 1 long term disability ; 1 none	2 eleven to twenty; 1 six to ten times; 6 one to five times; 1 no	4 very good; 3 good; 1 fair; 1 bad; 1 very bad	7 Yes; 3 No
2	10	4 M; 6 F	From 35 to 67 years old	1 postgraduate degree; 5 undergraduate degree; 1 further education beyond 18 but not a degree; 1 left school at 18; 1 left school aged 16 ; 1 not disclosed	1 full-time; 1 part-time; 1 unemployed; 3 fully retired from work; 1 permanently sick;	3 six to ten times; 2 one to five times; 4 no visits; 1 not disclosed	5 very good; 3 good; 2 fair;	4 Yes; 6 No

					3 none			
3	3	3 F	From 42 to 66 years old	1 further education beyond 18 but not a degree; 1 left school aged 16; 1 not disclosed	1 part-time; 1 fully retired; 1 not disclosed	1 eleven to twenty; 1 one to five times; 1 not disclosed	1 good; 1 bad; 1 not disclosed	2 Yes; 1 No
4	4	3 M; 1 F	From 65 to 73 years old	2 postgraduate degree; 1 have undergraduate degree; 1 not disclosed	2 part-time; 1 fully retired; 1 not disclosed	3 one to five times; 1 not disclosed	1 very good; 1 good; 1 fair; 1 not disclosed	2 Yes; 2 No

a: Number of times seen or spoken to GP or nurse in the last 12 months; b: Self-reported health status; c: Number of participants reporting having at least one long term condition.

Sex: M (male); F (female). Education: postgraduate degree; undergraduate degree; further education qualification beyond the age of 18 years, but not a degree; left school aged 16 or younger and no further education. Occupation: Full-time paid work (30 hours or more); Part-time paid work (under 30 hours); Long term disability; Fully retired from work.

Box 1: Topic guide used in the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

What are your experiences or opinions of Patient Safety in your practice in Primary Care?

Prompts (to be used only if necessary):

- What does the term "Patient Safety" mean to you?
- What type(s) of safety problem(s) can occur?
- Has anyone ever experienced a safety problem in their practice?
- Why do safety problems occur?

What are the key aspects that you consider relevant to Patient Safety in Primary Care?

Prompts (to be used only if necessary):

- When / where can patients be harmed when receiving care?
- Communication?
- Practice culture?

What can be done to prevent patients from being harmed in Primary Care?

Prompts (to be used only if necessary):

- Improve communication when a patient is discharged from hospital?
- Ensure results get reviewed?
- Avoid errors around repeat prescriptions?

Box 2: Examples of patients' conceptualizations of patient safety in primary care, obtained during the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

- 'I would say it [patient safety] is an adverse event which affects the wellbeing of the patient, whatever it may be.' (participant 1, group 4)
- 'Probably [patient safety is] being treated to the best possible standard, look at it positively with respect to all the recent guidelines for every patient coming in with every condition which is…yeah?' (participant 2, group 4)
- '[Patient safety is] kind of like the well-being of the patient. (participant 3, group 3)
- '[Patient safety is] Trying to do with what's appropriate for the patient.' (participant 6, group 1)
- 'That is a patient safety incident [side effects from wrong medicine]. That's an iatrogenic incident because you were injured under the care of the physician.' (participant 3, group 4)
- 'I think [patient safety is] the trusting, the confidence in your doctor or the practice or the nurse or whoever it is, that they will treat you properly and if they don't know what's going on, they'll find someone who does.' (participant 5, group 2)
- '[Patient safety is] trust basically. Having that trust that you will be looked after by your surgery' (participant 1, group 2)
- '… I look upon safety as harm.' (participant 3, group 4)
- 'I would say [patient safety] is when your needs are given full consideration and not kind of left behind (…) it's kind of…receiving treatment that you need really.' (participant 3, group 3)
- 'Patient safety would be that you, the patient tells you all the information about him or herself. It needs to have what conditions they have, what medication they have, what allergies they have and what treatment – maybe they've had operations or treatment for certain things. All that needs to be registered and monitored so that it doesn't matter who you see in the practice, they can just get the notes and have a look at it and that is very, very important for patient safety.' (participant 2, group 2)
- 'Patient safety to me is maybe before you are born actually, there was a programme on the television called Your Life in their Hands – I'm putting my life into the doctor's hands. GP is the orange where everything is collated and put in together whereas now it's getting that I'm scared to

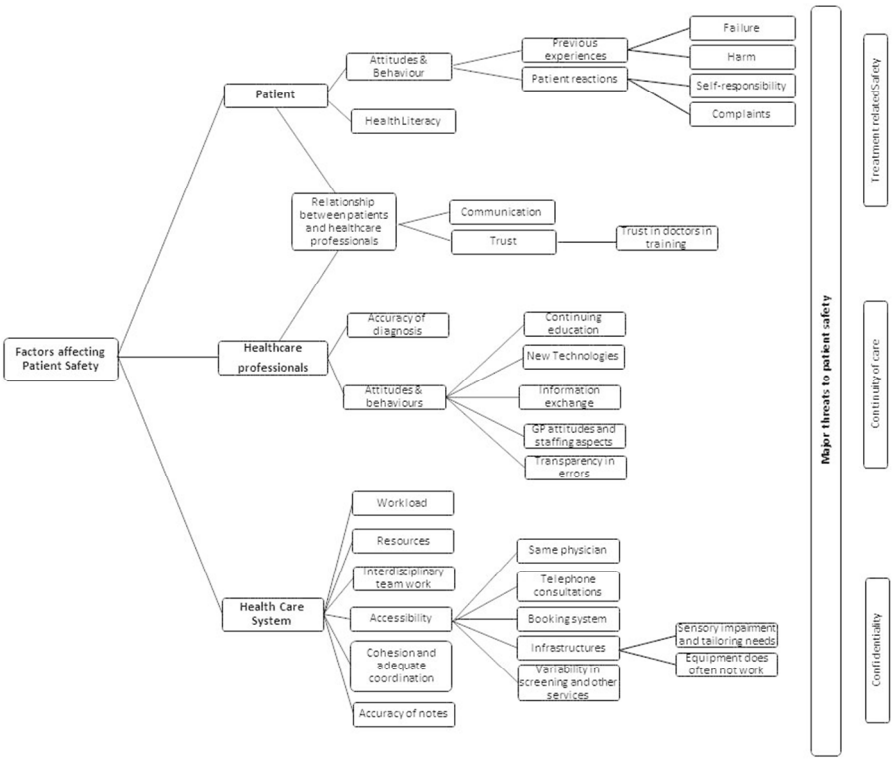
put my life in their hands. If I don't look after my life I'm not really prepared to put it into their hands.' (participant 1, group 3)

- [An important aspect of patient safety is] 'Wrong medication…. Yeah wrong dosage and wrong type and stuff like that you know.' (participant 2, group 3)
- 'Safety – providing safety around a patient's confidentiality, situation, condition that they may have – you know providing that safety around them, kind of like safeguarding. That's my fear.' (participant 2, group 3)
- '(…) there's a very important issue about accuracy: a recording of data, recording of data against the right patient record.' (participant 2, group 1)

Box 3: Patient-reported examples of experiences of patient safety events in Primary Care collected during the four focus group interviews (27 participants) that took place in two regions of South England between July and November 2013

- 'My husband was phoned by the surgery and told he had to go and see the doctor and he said, 'What for?' and he said, 'Oh because of some tests that you've had,' or something, and he thought, 'Well I haven't had any tests.' So he went to see the doctor and the doctor said, 'We have a blood pressure machine in the waiting room that patients are encouraged to use and you put a slip of paper in with your name and your date of birth and then that's recorded against your record and one of the doctors looks at it and calls you in if you're blood pressure is not within the range that it should be.' And the doctor said, 'Well you took your blood pressure and it was really high, I can't remember but it was very high.' So my husband said, 'Well I haven't been in the surgery.' And he said, 'Yes you came in on X date in March – and on X date in March we were in XXX [name of a city]. So basically someone came into the surgery with very high blood pressure and the reading was recorded against my husband's record instead of his or hers, so we wondered what happened to that person.' (participant 2, group 1)
- 'One of my sisters had quite significant problems lately. I mean one of the key indicators is rapid weight loss and she lost I think three stone over the course of about three or four months and she's had all sorts of problems trying to have the problem diagnosed and it might be that the condition that she has now finally been diagnosed caused a miscarriage. And it's been extremely stressful – there's been blood tests have gone missing, it's been the wrong notes have been looked at, she has to go through the same thing with different doctors – that's if she can get through the receptionist.' (participant 6, group 1)
- 'Well a few years ago I had a condition that I went to the doctor – my body broke out in this rash suddenly – it started as a spot and the next day it was all over one side of my body and I went to my…this was a few years ago…I went to my doctor and said, 'What is this?' and she said it was one thing and it wasn't and she kept…I had to see three doctors really until this doctor pinned down it was, it was an eczema kind of thing that just spread. But you know these people looking at me and not knowing what it was.' (participant 6, group 2)
- 'I have a friend whose son had a blood clot and he was very young. Her son was the same age as my son and he had Warfarin, he was young. Over a Christmas period he had to go to an

emergency doctor – chest pain – antibiotics was subscribed, he died Boxing Day in her arms – blood clot in the lung. No continuity of care. No continuity. No flashing showing Warfarin; young man, you know thirty years old; nobody giving them advice, no continuity of care.' (participant 1, group 3)



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Supplementary Table S1. Individual characteristics of the informants who participated in the group interviews

Group	Sex	Age	Ethnicity	Education	Occupation	Times seen by a healthcare professional [a]	General health [b]	Long term conditions
1	F	28	White	Further education qualification beyond 18 years, but not a degree	Full-time paid work (30 hours or more each week)	Six to ten times	Very good	Yes
1	M	41	White	Further education qualification beyond 18 years, but not a degree	Unemployed	One to five times	Very good	No
1	M	44	White	Undergraduate degree	Unemployed	One to five times	Very bad	Yes
1	F	52	White	Further education qualification beyond 18 years, but not a degree	Part-time paid work (under 30 hours each week)	One to five times	Good	Yes
1	F	60	White	Left school or college aged 17 or 18 years and had no further education	Part-time paid work (under 30 hours each week)	Did not see a GP/nurse in the last 12 months	Very good	No
1	F	60	White	Left school or college aged 17 or 18 years and had no further education	Part-time paid work (under 30 hours each week)	One to five times	Good	No
1	M	67	White	Left school aged 16 years or younger and had no further education	Fully retired from work	One to five times	Good	Yes
1	F	67	White	Left school or college aged 17 or 18 years and had no further education	Fully retired from work	Eleven to twenty times	Fair	Yes
1	F	69	White	Postgraduate degree	Unclear	One to five times	Very good	Yes
1	F	NR	White	Left school aged 16 years or younger and had no further education	Permanently sick or disabled	Eleven to twenty times	Bad	Yes
2	M	35	White	Undergraduate degree	Unclear	Did not see or speak to a GP or nurse from my GP surgery in the last 12 months	Very good	Yes
2	M	40	White	Undergraduate degree	Unclear	NR	Fair	No
2	F	42	White	Undergraduate degree	Part-time paid work (under 30 hours each	One to five times	Good	Yes

					week)			
2	M	51	White	Undergraduate degree	Full-time paid work (30 hours or more each week)	Did not see a GP/nurse in the last 12 months	Very good	No
2	M	52	White	Undergraduate degree	Unclear	Did not see a GP/nurse in the last 12 months	Very good	No
2	F	57	White	Further education qualification beyond 18 years, but not a degree	Permanently sick or disabled	Six to ten times	Good	Yes
2	F	59	White	Left school or college aged 17 or 18 years and had no further education	Unemployed	Did not see a GP/nurse in the last 12 months	Very good	No
2	F	63	White	Left school aged 16 years or younger and had no further education	Fully retired from work	Six to ten times	Fair	Yes
2	F	65	White	Postgraduate degree	Fully retired from work	One to five times	Very good	No
2	F	67	White	NR	Fully retired from work	Six to ten times	Good	No
3	F	42	Black	Further education qualification beyond 18 years, but not a degree	Part-time paid work (under 30 hours each week)	One to five times	Good	Yes
3	F	66	White	Left school aged 16 years or younger and had no further education	Fully retired from work	Eleven to twenty times	Bad	Yes
3	F	NR	Black	NR	NR	NR	NR	NR
4	F	62	White	Postgraduate degree	Fully retired from work	One to five times	Good	Yes
4	M	65	White	Postgraduate degree	Part-time paid work (under 30 hours each week)	One to five times	Very good	No
4	M	73	White	Undergraduate degree	Part-time paid work (under 30 hours each week)	One to five times	Fair	Yes
4	M	NR	White	NR	NR	NR	NR	NR

a: Times seen or spoken to GP or nurse in the last 12 months; b: Self-reported health status; M, male; F, female; NR, not reported.

Supplementary Table S2. Patient factors influencing patient safety in primary care (illustrative quotes)

Attitudes & behaviours	***Previous experiences of failure and harm***	**Failure and harm** *'And of course because I didn't feel listened I was then extremely nervous and I kept repeating, "Look please can you…", and she kept saying, "Oh don't worry just lie down just….", and then everything was, "I'll do it quickly [name] it'll be over before you know it", and it all went wrong. (…) And it probably wouldn't have gone wrong if I wasn't so uptight but because I didn't feel that she was listening to me. That's right and I ended up with two black arms because lo and behold I let her do it twice!'* (p1_g1) *'My wife – we were going on holiday – my wife was ill, she was given antibiotics and she was taking them while we were away. The condition got worse – we had to go to a doctor in the States and he looked at the pills and he said they were given those in the trenches in the First World War. You know chuck those away, have these.'* (p6_g1)
	Patient reactions	**Self-responsibility** *'You ask for it you get it. I mean that's not a problem, it's up to the patient. I mean what you're saying there is quite right. The patients have now got to take some more responsibility for their health. Mostly they turn up at a hospital, they don't know what medication they're on, they know nothing and they say, "I'm in your hands carry on". They've got to start keeping a copy of their meds so in case something happens it's there. They've got to work along with the physician for too long, you know, everybody's sort of sailed along. But yeah that's wrong; they're supposed to tell people. Whether they will always listen because…you're hit the nail on the head…'*(p14_g4) ***Complaint*** *'The problem with the patient taking up quite often is you are standing up to a GP. There's a big blank in front of you saying this is an important person, passed all sorts of exams and I'm now going to start saying "please sir, you've made a mistake". You phone up the GP's receptionist and quite often the tone of voice on the other end…it might be very pleasant, they can feel it in the background, "Oh you idiot phoning up"'* (p18_g1).
Health literacy	-	*'Again safety issues – when a patient goes in to see a GP that patient is quite often stressed for various reasons. The GP talks to them, probably says some medical terms or whatever; the patient walks out and quite often forgets what they were told, not unusual at all.'* (p13_g4)

Supplementary Table S3. Relationship between patients and health professionals (illustrative quotes)

Communication	*'I think the minute you walk in the door more or less, the first words that you say if the feedback you get you do realize that, you know, they're listening to you and they relate to you by answering your question, rather than them either ask you, "Well, you know, what can we do for you?" and then you can be sitting, "Well hang on, you know, you're the expert, you know, could you please just try and explain or give me some options". '* (p8_g1) *'And that's very important because if a doctor doesn't listen then safety goes out of the window so a doctor has to listen to the patient.'* (p1_g3)
Trust	*'No, I was just going to say continuity of care and you know when you go and see your GP and see the same one regularly, you know that they have an understanding or perhaps, you know, an illness or condition that you have and they cannot write everything down in the notes. Obviously they do write notes each appointment but when you've got that one to one relationship with your GP it's just so much nicer; you trust them, you know they know you.'* (p2_g2)
	Trust doctors in training *'(…) older GPs that this…that a lot of older people did…the doctor was more educated than them so they did view them in a better way whereas now maybe doctor's training has changed; society's more equal and maybe younger doctors adopt a more 'we're going to deal with this together' approach rather than some of the older doctors feeling that they are in charge.'* (p1_g2)

Supplementary Table S4. Health professionals' factors influencing patient safety in primary care (illustrative quotes)

Attitudes and behaviours	**Professional attitudes towards new technologies** *'But then I was going to say that…and I'm all in favour of that but when you're sitting there with a doctor and they're doing this while you're trying to explain something to…they're thinking, 'Oh how do I put this down?' I thought it was supposed to be a one to one. '* (p9_g2) *'I think there's, sorry there's a reliant on machinery though. '* (p4_g2) *'(…) I haven't felt safe with because the internet's quite a powerful tool and if you do research they don't actually like you contributing what you think and sometimes I've seen doctors I know don't have a clue – they go online or they go through a big book and I suddenly start to feel I don't feel safe because they don't actually have…I know they don't have the knowledge so they're kind of going [intake of breath].'* (p6_g2)
	GP attitudes towards staffing aspects *'Yes and I think maybe that doctors should look after their patients and should not manage. Managers manage doctors – they shouldn't have to manage.'* (p3_g2) *'(…) They won't treat you because NICE says you can't be treated if you're borderline is that right? Well it is right because I know for myself; you can't be treated if you're borderline.'* (p2_g2)
	Transparency in errors *'if they analyse what the mistake is, find out why it happened, trace it back and then obviously put a system or procedures in place which will then prevent it happening and share it round if it's liable to happen elsewhere. '* (p10_g2)
Accuracy of diagnosis	*'They haven't got enough time to diagnose. '* (p21_g1)

Supplementary Table S5. Healthcare system factors influencing patient safety in primary care (illustrative quotes)

Workload	*'Think it is because sometimes they can give you, you know, out of a rush and you've got only ten minutes time. GP is stressed out, he's got that pressure of a patient load, I understand that.'* (p2_g3)
Resources	*'Yeah if the system is a hundred years/fifty years out of date it's negligence frankly that we're not improving the system.'* (p1_g4)
Interdisciplinary team work	*'I think everyone should work hand in hand so that means the doctor, the nurse – everyone should be uniform together. GP's the orange and he's got everybody around him yep.'* (p2_g3)
Accessibility	**Same Physician** *'If I wanted to see a specific doctor I could wait anything up to the three months which to me is far from satisfactory because you know medical conditions can change in a matter of hours, let alone three months.'* (p6_g1) *'Trying to do with what's appropriate for the patient – trying to get an appointment with a specific doctor is impossible sometimes.'* (p6_g1) *'But even when I go in and see my doctor, no I see her…always choose the same one. No she's still looking…no she's still looking through and trying to read up everything and I'm thinking, "Well I've seen other doctors and they just don't know, they just don't know you, they can only look at what's on the screen, they have very little time to actually look at, you know, the history".'*(p3_g1)
	Booking system *'I mean the first point of contact is your receptionist - there's another bit of problems there as well. The way how they're not…they don't address confidentiality very well, everything is blurted out. "Mrs X blah blah blah", for everyone to hear yeah.'* (p2_g3) *'She's unqualified, she shouldn't make that decision.'* (p1_g3) *'So you can't afford to be ill at a weekend or after half past six. But a lot of the safety lies with that receptionist with your confidentiality.'* (p1_g3)
	Infrastructures *'(…) These are not buildings built as a medical facility which are being used as primary care clinics. That is a really potential safety issue. Some of them don't even have lifts; you get old dears struggling up the stairs.'* (p1_g4) *'No but even so I know that, you know, I've grown up with modern technology but my grandmother doesn't know how to use that. Goes in and looks at it and the ladies at the reception desk go like, "Well the machine's there." '* (p4_g1) '
	Variability in screening and other health services *Is this where this postcode lottery thing comes in? I'm not sure if it's relevant because you hear about some people if they require sort of physiotherapy or occupational health, something like that. There's easier access to it in certain areas than others.'* (p5_g1)
Cohesion and adequate coordination	*'The local hospital cannot see the patient's GP records in the twenty first century through an IT system. That has been a huge issue and that is a real safety…is what happens? The patient goes to hospital; the local registrar in A&E spends fifteen minutes trying to question the patient on their medical background when it's already there on a database in the GP's surgery.' (p1_g4)*
Accuracy of notes	*'(…) so basically someone came into the surgery with very high blood pressure and the reading was recorded against my husband's record instead of his or hers, so we wondered what happened to that person.'* (p2_g1)

Supplementary Table S6. Major threats to patient safety in Primary Care (illustrative quotes)

Confidentiality	*'if you go to a GPs surgery whatever is wrong with you – mental health, physical health – you need to know that everything that is said is kept confidential (…)'* (p1_g4) *'Coupled with that confidentiality – receptionists. When they're perhaps talking on the phone mentioning names and people's condition in view of the whole waiting room.'* (p4_g2) *'But then what would you do with the confidentiality because if you're having these notes flying around to the ambulance service, the out of hours service, this, that and the other – we don't know who's accessing them (…)'* (p2_g2)
Continuity of care	*'Is a very important, to me, that is priority because if you walk into your GP he knows you, he knows what the situation is. You walk into a locum and he's got to read all these notes; your time of your twelve minutes is gone and you don't feel that there is a continuity of care. So patient safety is a big one – continuity of care. '* (p1_g3)
Treatment-related safety	*'No I was going to say it's also the prescriptions, the writing on the prescriptions. If that's not illegible and then the pharmacist doesn't read it properly that is a big issue.'* (p2_g1) *'And we know about communication. I mean thirty percent of all the prescriptions written out aren't taken, they aren't taken. And you see when someone's died, you see them coming back with two Sainsbury's bags normally full of prescriptions, full of drugs and they get thrown away. Now why does that happen?'* (p3_g4)

No	Item	Guide questions/description	Reported on Page#
Domain 1: Research team and reflexivity			
Personal Characteristics			
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group?	5
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD*	5
3.	Occupation	What was their occupation at the time of the study?	5
4.	Gender	Was the researcher male or female?	1
5.	Experience and training	What experience or training did the researcher have?	5
Relationship with participants			
6.	Relationship established	Was a relationship established prior to study commencement?	6
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? e.*g. personal goals, reasons for doing the research*	N/A – not reported
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic*	N/A – not reported
Domain 2: study design			
Theoretical framework			
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis*	6
Participant			

No	Item	Guide questions/description	Reported on Page#
selection			
10.	Sampling	How were participants selected? *e.g. purposive, convenience, consecutive, snowball*	5
11.	Method of approach	How were participants approached? e*.g. face-to-face, telephone, mail, email*	5
12.	Sample size	How many participants were in the study?	5
13.	Non-participation	How many people refused to participate or dropped out? Reasons?	Not applicable
Setting			
14.	Setting of data collection	Where was the data collected? e*.g. home, clinic, workplace*	5
15.	Presence of non-participants	Was anyone else present besides the participants and researchers?	5
16.	Description of sample	What are the important characteristics of the sample? *e.g. demographic data, date*	table 1, pages 20-21
Data collection			
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	5
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data?	5
20.	Field notes	Were field notes made during and/or after the interview or focus group?	5
21.	Duration	What was the duration of the interviews or focus group?	5
22.	Data saturation	Was data saturation discussed?	Not reported
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No

No	Item	Guide questions/description	Reported on Page#
Domain 3: analysis and findingsz			
Data analysis			
24.	Number of data coders	How many data coders coded the data?	6
25.	Description of the coding tree	Did authors provide a description of the coding tree?	Figure 1
26.	Derivation of themes	Were themes identified in advance or derived from the data?	6
27.	Software	What software, if applicable, was used to manage the data?	Not reported
28.	Participant checking	Did participants provide feedback on the findings?	Not reported
Reporting			
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.*g. participant number*	Online tables S1-S6
30.	Data and findings consistent	Was there consistency between the data presented and the findings?	Yes, pages 7-11
31.	Clarity of major themes	Were major themes clearly presented in the findings?	Yes, pages 7-11
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes, pages 7-11